



Future Social Meeting Point in Supermarkets

Integral Design Project - Report Phase 3



Team RAZB:

Renée van Boheemen
Sandra Bruij
Deian Mishev
Marcel Schneijdenberg
Karina Simane
Barbara Spitaler

Mentor: **Annemiek van Boeijen**
Detached Critic: **Erik Jepma**
Company mentors: **Monique Winters**
Martin Gerssen

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1. Introduction

This is the third and the final report of group Razb for the course Integral Design Project, TU Delft. The client company for the project is Albert Heijn.

In this report the overview of the project phase 3 is provided. After the analysis in phase 1 and phase 2 (and the report) finished with the winning concept "Speak up your heart", we continued in phase 3 to bring this concept further.

In the report the in-store concept will be introduced. The main elements such as technology, shape and interaction will be described.

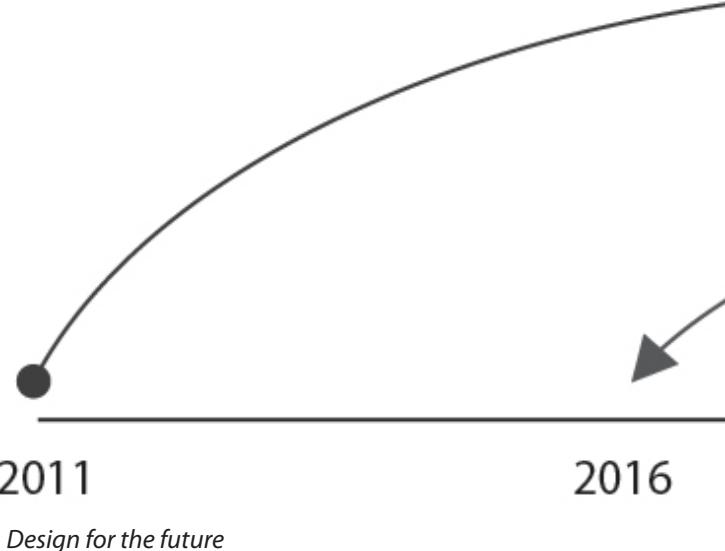
Further the report is continued with a marketing plan. In the marketing planning the most essential elements (that are applicable to this project) have been worked out- the analysis of the competitors and the SWOT analysis for the concept. In order to structure the knowledge gained in the previous phases of the project the business model grid of Alexander Osterwalder has been used. The marketing plan is concluded with the implementation plan showing the steps that has to be taken to successfully implement the concept in all Albert Heijn XL stores.

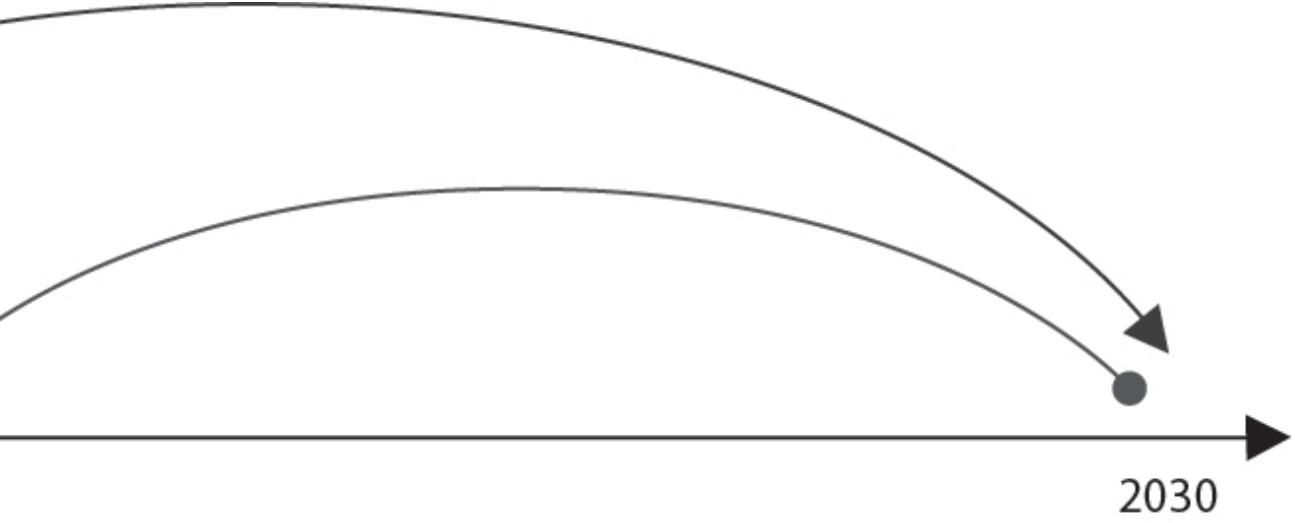
As the concept "Speak up your heart" is designed to be implemented in the future 2030. However the design brief from the client was – "to have a prototype that will be placed in the headquarters of Albert Heijn in Zaandam, in the Innovation Cafe, and could be used to inspire the employees and guests of Innovation Cafe (2016 approx.)". Thus, an adaptation from the real concept had to be made for the current environment of the Innovation Cafe and this report continues with the implementation in it. To make the transition from the real concept to the prototype, all the pro's and con's were evaluated and the most suitable adaption plan was chosen.

The next step was building the prototype, therefore in the report we are showing the process how the prototype was built and how the interface was created.

Last but not least each member of the team Razb has written a short recommendation/ reflection about the project, stressing the learning points and the experiences gained.

The report finishes with a conclusion about the third phase and the whole project in general.





2. In-store concept

The in store concept consists of two main parts. These are the **Application** and the **Heart Shaped Table Top**.

The application is proposed to be a freebased app. or an addition inside the appie application of AH. The smartphone application is used to enable the customers to post statements which will be displayed on the table top while they are in a pre-set area having the supermarket as its center. It also gives them the possibility to respond to statements that other users post on their comment or load a profile picture and specify if it should be disclosed to the other inside the store. The same options are given about hiding or showing their location inside the store.

The table, besides the coffee corner of the future, is an interactive extension of the application. The heart shape table is equipped with touch screen monitors in which the statements of the people in the store can be viewed and commented. Its connection to the online service allows its importance to be balanced in accordance to the possibilities of its interface and the interface of the application. The two tables have a different height, this is done to include a broad range of users. The table and the possibilities standing before it (being the focus of this project) are further researched and developed.

The in store concept is developed according to the three main factors.

1. Technology
2. Shape
3. Interaction

These three are developed to enhance and strengthen the concept and provide for a smoother future implementation in the supermarket. This development commences from the state that the concept had during the previous second stage and impact both the: Application and the Table Top. The storyboard underneath, that is also included in the final poster presentation, shows how specifically the interaction is carried between the online domain (Application) to the offline (Heart Shaped Table Top). Nevertheless until this stage the issues of implementation which include the three researched factors had been barely touched. In this section they are thoroughly reviewed and the possibilities and difficulties that the concept might face when it physically manifests have been discussed.

Step 1



Step 2



- enter a statement (that can be done at home or on the way to the shop or inside the shop- any place that is convinient for you)

- when entering your statement it and pops up on



A visualisation of the In-store concept.

Shop around



the shop
is activated
the table

Step 3



Indirect communication:

- go to the meeting point to check out other statements
- leave your reactions to other statements

Step 4



Direct communication:

- talk to people about their statements, ask questions and provide with answers

2.1 Technology

To make the final concept work, we thought of several ways to achieve this. The technology should provide:

1. **Displaying the interface over the whole curved tabletop**
2. **Touch functionality to use the interface**
3. **Location tracking of the user**
4. **App functionality for all types of smartphones**

2.1.1 Displaying the interface

To display the interface we investigated several options. We could use LCD or LED screens, OLED screens and projectors. Because the shape of the object is very curved both horizontally and vertically it is not possible to cover the tabletop with normal LCD and or LED screens. These screens aren't able to be bended and or curved on the sides.

Using projectors gives the ability to fill the whole tabletop as the final concept requires. There are three different ways to achieve that:

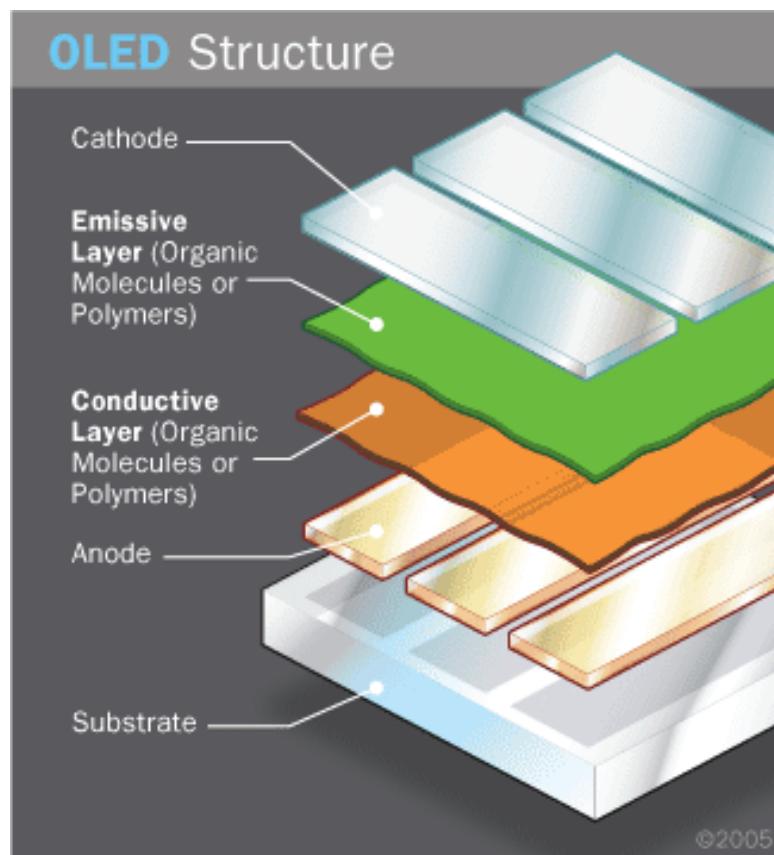
o By projecting from the bottom. This is the most ideal because you will not have any shadow casts of the people around it. The only problem is that the shape is very open which means you either see the projectors or you have to build the projectors into the floor. This makes the costs to place the table very high and there can be a problem with the heat distribution of the projectors; they can get overheated.

o Projecting from above can be done in two ways: from straight above and with multiple beamers from the sides. Projecting from above looks good when you see it from a distance, but when you try to touch a bubble on the screen, your own shadow will block your view on the interface.

o Projecting from the sides would solve that, but it means you need even more projectors and you have a longer time installing the final product, because you have to set everything very neat or else the displayed interface will become blurry.

The best option would be to use OLED screens. They are very thin, have low energy consumption and don't get overheated very easily. The only problem we face here is that currently also the OLED screens are able to be bended, but this is very expensive.

"Like an LED, an OLED is a solid-state semiconductor device that is 100 to 500 nanometers thick or about 200 times smaller than a human hair. OLEDs can have either two layers or three layers of organic material; in the latter design, the third layer helps transport electrons from the cathode to the emissive layer.



An OLED consists of the following parts:

- o Substrate (clear plastic, glass, foil) - The substrate supports the OLED.
- o Anode (transparent) - The anode removes electrons (adds electron "holes") when a current flows through the device.
- o Organic layers - These layers are made of organic molecules or polymers.
- o Conducting layer - This layer is made of organic plastic molecules that transport "holes" from the anode. One conducting polymer used in OLEDs is polyaniline.
- o Emissive layer - This layer is made of organic plastic molecules (different ones from the conducting layer) that transport electrons from the cathode; this is where light is made. One polymer used in the emissive layer is polyfluorene.
- o Cathode (may or may not be transparent depending on the type of OLED) - The cathode injects electrons when a current flows through the device."

The OLED lights up by sending an electrical current from the cathode to the anode through the organic layers. The cathode gives the electrons to the layer and the anode removes them from the layer. When an electron is between the emissive and the conductive layer it finds electron holes and fills them up. When this happens the electron gives up energy in the form of a photon which causes light. By using several types of layers you can create colored displays. The more current that is applied the brighter the light. Another way is by making the substrate reflective so the light will only go up.

The folding of the OLED is done by using flexible layers. At this moment there are a lot of manufacturers that are developing these folding screens, but there is no product on the market yet that uses this technology because of the high cost.



The curved side of the screen is something which is not done yet, but is to be expected in the nearby future. There are already a kind of round OLED tiles available at OSRAM.

2.1.2 Touch functionality

Integrating the touch functions can not be done by using an existing touch screen because the shape of our table requires an extended screen which is bended in more than one of its axis.

However these new technology will be based on one of the several current touch sensitivity techniques:

o Resistive

This uses several layers separated by a narrow gap. When a finger pushes on the screen, the metallic layers become connected at that point. The panel then behaves as a pair of voltage dividers with connected outputs. This causes a change in the electrical current, which is registered as a touch event and sent to the controller for processing.

o Surface acoustic wave

This uses ultrasonic waves that are being distorted when you touch the screen. This change registers the position of the touch.

o Capacitive

This uses the ability of the human body to behave as an electrical conductor. Touching the surface results in a distortion of the electrostatic field and can use this to measure the position of the finger. A big disadvantage is, that because you use your skin, you can't use it with anything other than your naked finger. So no gloves, pens or other objects.

o Infrared

Uses an array of x and y infrared LED - photo detector pairs on the edge of the screen. An advantage is that it doesn't require a filter on the screen (which can decrease optical clarity). A disadvantage is that you need a border around your screen. So this is not possible for our product, because the object is so curved and it will be difficult to determine the x and y position in an accurate way.

o Dispersive signal technology

Introduced in 2002 by 3M, this system uses sensors to detect the mechanical energy in the glass that occurs due to a touch. Complex algorithms then interpret this information and provide the actual location of the touch. There is no additional layer needed and it has a superb optical clarity. A disadvantage is that it cannot detect a motionless finger after the first touch. So you cannot hold a bubble on the same place by touching it and holding it, because it will not notice that you are still touching the screen.

o Acoustic pulse recognition

This system, introduced by Tyco International's Elo division in 2006, uses piezoelectric transducers located at various positions around the screen to turn the mechanical energy of a touch (vibration) into an electronic signal. The screen hardware then uses an algorithm to determine the location of the touch based on the transducer signals. The touchscreen itself is made of ordinary glass, giving it good durability and optical clarity. The system has the same disadvantage as the Dispersive signal technology.

Conclusions are:

At this moment the best option would be to use the resistive technology, while it is also used in the most current products and has the most suitable properties for the final concept.

2.1.3 Location tracking

To be able to show the location of the user on the map of the screen, we will need a location tracking system. At this moment there are several parties busy with developing such a system for in a store, so you can find products more easily. The problem with using for example GPS is that this is only accurate on several meters, which means that you can on screen be displayed to be 5 meters from the place you really are. In a store this is a rather big distance. Therefore you need to make a local positioning system with lots of antennas. These antennas are sometimes not able to send the signal through certain materials like metal and concrete. A lot of development is still being done in this field and in the near future there will be systems available which will be advanced enough to not face these problems.

2.1.4 App for all smartphones

At this moment there are 4 major operating systems for smartphones: iOS (for iPhone), Windows Phone 7, Android and Blackberry. To make an app that supports all systems at once and not having to make 4 different apps, there is a new standard: HTML5. HTML5 is a new standard for structuring and presenting content for the internet. With this standard you can use an internet page as your app and still let it be an app.

To make the use of creating a statement with your phone as easy as possible it would be best to implement it in the already existing Appie application of Albert Heijn, which is already available for iOS and Android. In this way customers have to use only one app while they are in the store. This makes the accessibility and the willingness of posting a statement much better.



A personal statement being posted.

2.2 Table shape

The actual meeting place consists of two tables tops on which the screens with the software will be placed. The tables are designed to be open and inviting. The metaphor of a heart is used to attract people. The shape has an inner circle and an outer circle. People can stand inside the tables or chose to stand outside the tables, in this way there is enough personal space for each person and everyone can decide for him/herself where they feel comfortable. The two tables tops have different height, this is done to include a broad range of users. The tables are made from wood which is laminated, the wood gives a natural and warm feeling to the tables. People are familiar with this material and should be comfortable with it. We wanted to avoid a 'technical' look and feel for the tables which could be easily done with the advanced high tech touch screens used for the software.



2.3 Interaction

The design of the interface of the software is inspired by images of the flagship store of Albert Heijn in Zaandam.



The AH flagship store in Zaandam

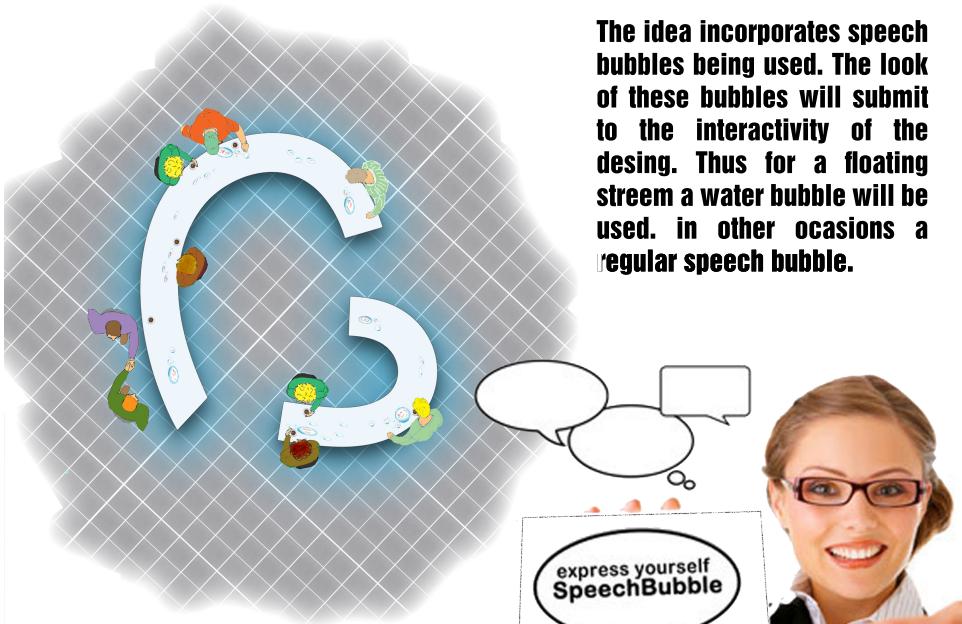
These images and subsequently the proposed interface include natural and bright motives. There is a parallel made between "speech bubbles"(bubbles filled with text to indicate speech or sounds in illustrations) and "water bubbles. These bubbles appear and float freely during the time that the customer is inside the store and when he/she leaves they disappear. On top they hold the text message of a customer but when pressed they give more detailed information about their owner. That information comprises of a map showing the approximate whereabouts in the store and a profile picture which the customer has chosen to be assigned to his profile.

Because of privacy reasons both should be made visible only if the owner has specified that he/she is comfortable with their disclosure.

When pressed the comment bubble will also include the comments given to it so that the customers can comment either the statement or its replies and thus have a more free conversation.



A picture of the interface



The idea incorporates speech bubbles being used. The look of these bubbles will submit to the interactivity of the desing. Thus for a floating strem a water bubble will be used. in other occasions a regular speech bubble.



3. Marketing plan

In the marketing plan we defined the most essential elements applicable to this specific project.

Firstly a brief competitor analysis was done. Although Albert Heijn is the leading retailer in the Netherlands, competitors had to be identified in order to understand the market they are operating. The gathered information was used further in SWOT analysis. SWOT was a helpful tool for us to identify the strengths, weaknesses, opportunities and threats for the worked out concept. As in the previous phases of the project we have gathered a lot of information, we decided to use the business model canvas of Alexander Osterwalder to structure the data and to find possible opportunities. This marketing plan is concluded with an implementation plan. As the concept now has been adapted for Innovation Café but in the reality is thought for supermarkets, in the implementation plan we identified steps that have to be taken for successful implementation.

3.1 Competitors

During our project we collected many information and conducted several analysis. We use this gained knowledge to develop a strategy for "Speak up your heart". A fundamental aspect of any strategy is a SWOT analysis. One of the necessary components is to know who are the known competitors thus we perform a competitor analysis.

To know what competitors do and to react fast on their activities or to be able to be ahead of the competition is of paramount importance. Competitors are mainly those companies that offer similar products or services, through satisfying similar needs or in terms of budget. A competitor analysis helps to identify opportunities. One way to screen the set of competitors is to use a set of concentric circles with the product or brand in question at the center. In total there are five circles or levels (Lehmann, Winer, 2005).

1. Level: Product form (same market segment and similar futures)

Supermarkets

- o Jumbo: has a cafe corner
- o C1000: is cheap

2. Level: Product category competition (similar futures)

Places who sells food like Hema food corner, La place, Kiosk.

3. Level: Generic competition: the market fulfilling the same customer needs

Social networks like Facebook.

Places in which people meet physically like market places, Cinemas, Cafe/Bars/Restaurants.

A description of the competitors of the third levels are given in the previous report (phase two). That report starts with an analysis about social network and an observational analysis of the marketplaces.

4. Level: Budget competition (all products and services competing for the same customer dollar as forming a market)

For "Speak up your heart" the level of budget competition does not apply because revenues are not directly generated.

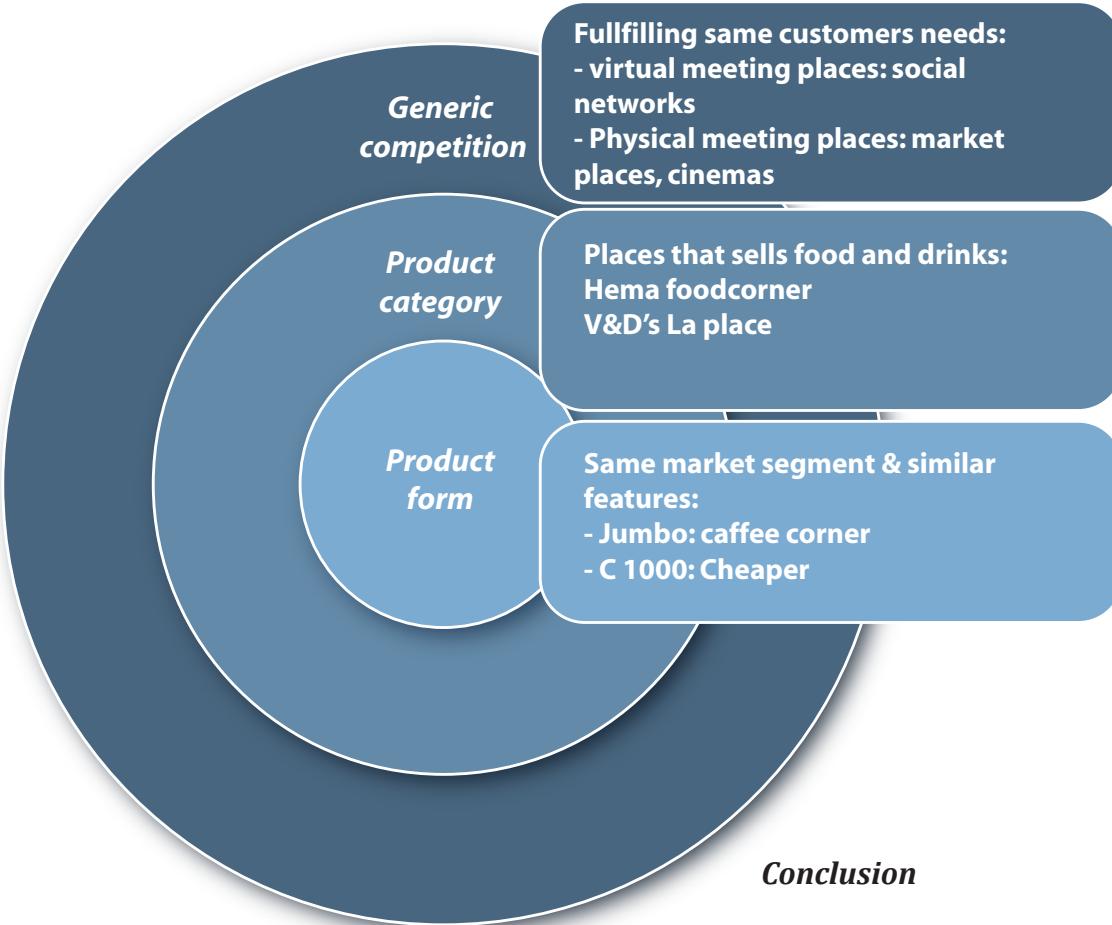
JUMBO and C1000



We identified the supermarkets Jumbo and C 1000 as the closest competitors. In principal each supermarket of the Netherlands are direct competitors of AH, but Jumbo with his cafe corner and C 1000 being cheaper seems the closest competitors.

Jumbo has a market share of 3.4 % in the Netherlands (2006) and is one of the fast growing supermarkets in the Netherlands (50 % year-on-year). They claim to have the greatest choice for the lowest price. In 2005 Jumbo was the "best shop chain of the Netherlands". The chain employs 10,000 people and there are, as of April 2006, a total of 53 branches and 24 franchisers. Currently Jumbo is presented in every province in the Netherlands, although the density of supermarket in Randstad is notably small. Jumbo offers a vast range of services to tighten the relationship with their customer. One instrument used by them is the cafe corner in Jumbo supermarkets, similar to the AH cafe corners.

C1000 tries to be the cheapest supermarket of the Netherlands and find itself in competition with Albert Heijn by addressing AH's weaker points in their advertisement. C1000 has a market share of 13.2% and growing (Albert Heijn has a market share of 33,6%). In the Netherlands there are 374 C 1000 stores with 32.000 employees.



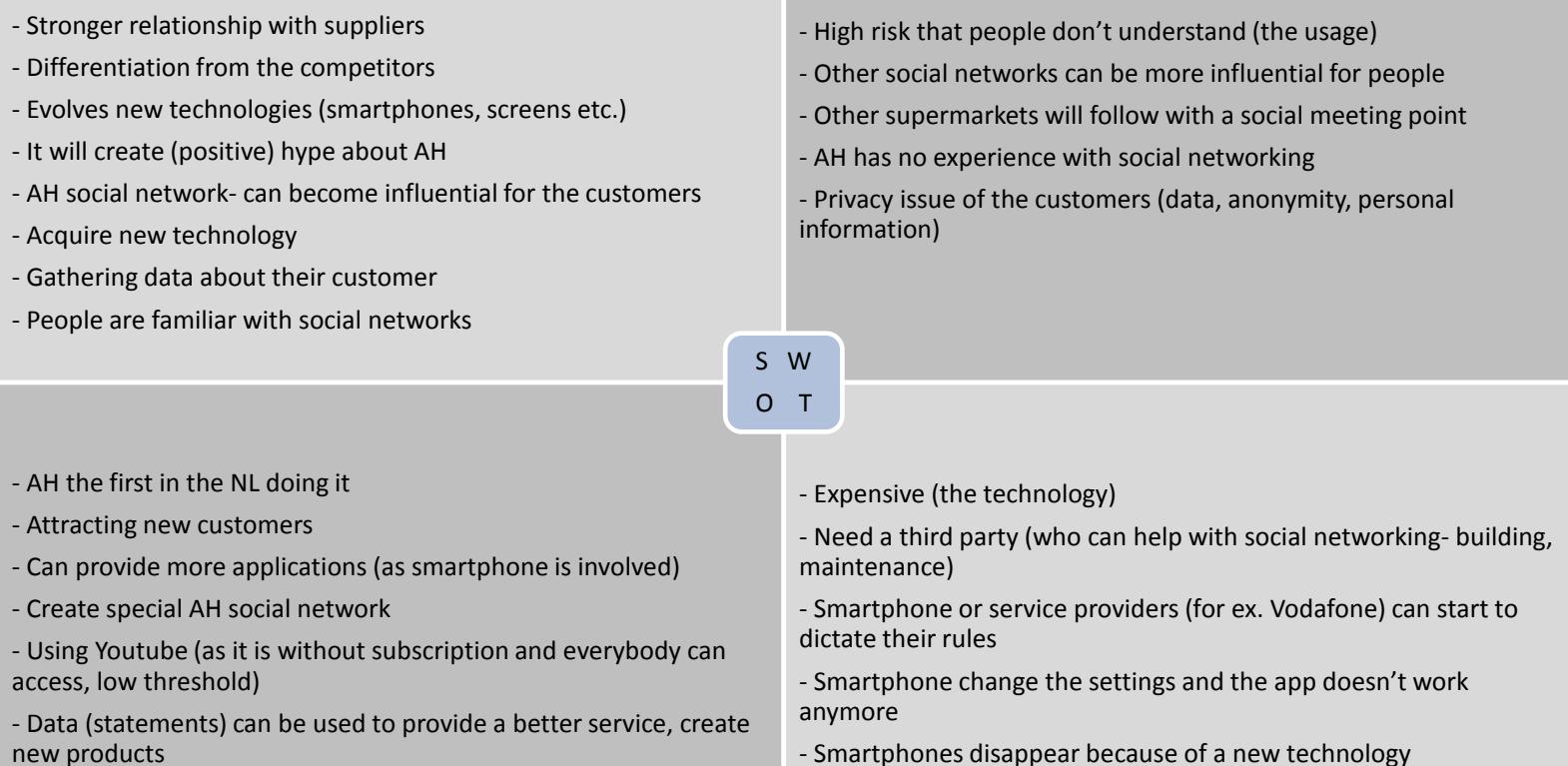
Conclusion

To conclude the analysis it can be seen that with "Speak up your heart" AH moves out of their familiar competitive set. Supermarkets are still the main competitors of AH but by introducing "Speak up your heart" as a physical and virtual meeting place in the AH supermarket they face new competitors like social networks or meeting places in a neighbor hood. In the level of generic competition, AH competes with "Speak up your heart" with market segments full filling same customer's need like sharing information or getting in touch with other people (socialize). A deeper analysis of social networks and marketplaces can be found in the second report of the project.

3.2. SWOT

SWOT analysis was used to evaluate strengths, weaknesses, opportunities and threats of the concept. By defining each strength we tried to find also a possible weakness, to see if there is an opportunity and what could be a threat. By using SWOT we were able to evaluate the concept and provide an advice to Albert Heijn.

In SWOT strengths are characteristics of the business that give it an advantage over others in the industry. Weaknesses are characteristics that place the firm at a disadvantage relative to others. Opportunities are external chances to make greater sales or profits in the environment. And threats are external elements in the environment that could cause trouble for the business.



Conclusion

From SWOT analysis it can be concluded, that Albert Heijn can be first in the market offering a social meeting point inside a physical establishment. However, it has to be kept in mind that competitors will follow. Therefore Albert Heijn has to closely monitor the trends in technology, social network development and buyers behavior in order to frequently provide additional innovative products and services to the existing concept. As this concept includes the use of smartphones and an app, it is of the utmost importance to gather data and knowledge about trends and developments in these areas.

3.3 Business model for „Speak up your heart“

„A business model describes the rationale of how an organization creates, delivers, and captures value.“

Business models are used to describe, facilitate and identify Business strategies, opportunities and to capture resources that is needed to achieve a goal. (Osterwald, Pigneur, 2010)

During the different phases of our project we collected many information and data. At some point we felt the necessity to bring the gathered data together. The business model canvas was used by us as a tool to structure and to combine all thoughts into one frame. In this way it allows to allocate resources and gaps, to have a complete picture of the project now and in the future and to provide a framework for future business opportunities.

Infrastructure	<ul style="list-style-type: none"> Key Activities: The activities necessary to execute a company's business model. Key Resources: The resources that are necessary to create value for the customer. Partner Network: The business alliance which complement other aspects of the business model.
Offering	<ul style="list-style-type: none"> Value Proposition: The products and services a business offers. Quoting Osterwalder (2004), a value proposition "is an overall view of .. products and services that together represent value for a specific customer segment. It describes the way a firm differentiates itself from its competitors and is the reason why customers buy from a certain firm and not from another."
Customers	<ul style="list-style-type: none"> Customer Segments: The target audience for a business' products and services. Channels: The means by which a company delivers products and services to customers. This includes the company's marketing and distribution strategy. Customer Relationship: The links a company establishes between itself and its different customer segments. The process of managing customer relationships is referred to as customer relationship management.
Finances	<ul style="list-style-type: none"> Cost Structure: The monetary consequences of the means employed in the business model. A company's DOC. Revenue Streams: The way a company makes money through a variety of revenue flows. A company's income.

Table 1: The four main areas and the nine building blocks of the business model canvas

Business models usually describes, how a company intends to make money. The business model canvas includes the four main areas of every business: Customer, offer, infrastructure and financial viability. An explanation of the main areas and the building blocks can be found in table 1.

The business model canvas was filled in during a session of one hour. During the session we wrote all important information gathered during the previous phases and related to the concept „Speak up your heart“ on post-its. We concluded the session by discussing each post-it and assign it to one of the nine building blocks.

3.4 The business model canvas

“Speak up your heart”

3.4.1 Summary

Since we design the social meeting point “Speak up your heart” for the future an implementation plan has to be created. The implementation plan describes the steps Albert Heijn should take to implement the design successful in the stores. The business model canvas is a helpful tool to bring all the gained knowledge and to draw a complete picture of the project. Further, it provides important insights in possible gaps and explores opportunities for the future. We defined the future to be at 2016, 5 years from now. “Speak up your heart” will start at the Innovation Café at Ahold headquarter in Zaandam and from there take the way to the Albert Heijn XL stores.

3.4.2 Vision

In 2016 the supermarkets of Albert Heijn will become the most inspiring and inviting spot of the neighborhood. We believe that the service “speak up your heart” will be key to create social interaction between people.

3.4.3 Mission

In the social meeting place each customer will have a chance to express his/ her concerns or feelings and to give input in creating a better local society.

3.4.4 Offer

“Speak up your heart” is a service for mobile phones, physical meeting place in the store, and a platform for sharing information.

3.4.5 Target group

All people who make use of a smartphone and are customers of Albert Heijn are potential users of the device.

3.4.6 Value proposition

“Speak up your heart” can tighten the relationship with the customer of Albert Heijn. The service and the physical place in the shop brings people together who do not know each other. In this way, the anonymity of shopping is “killed” and the supermarket can turn into an important spot of the neighborhood. On the other side, the statements and the comments left by the people can provide interesting insights of the concerns people of a certain local community have. The social meeting point “Speak up your heart” combines the trend of social network with a physical place in one spot and can be considered as an innovative approach for supermarkets. All the above mentioned issues are significantly differentiation from competitors and helps to build a stronger brand.

3.4.7 Benefits for Albert Heijn

"Speak up your heart" is mainly a free service for the customer of Albert Heijn. Benefits are generated indirectly by building and strengthen customers fidelity. For the future, additional services can be generated.

3.4.8 Example of an additional service

"Speak up your heart" as an advertisement tool: On the tables recipes can be displayed, posted by people or by Albert Heijn. The map can show, where the ingredients for the recipe are located in the shop. In this way, single products can be promoted.

3.4.9 Introducing "Speak up your heart" to the customer

Recommendation for the introduction to the customer are:

- o Creating an opening event on Sunday afternoon
- o Involving employees actively in the first performance

This can be done by:

- o Providing a game that triggers people to participate.
- o Make sure, that there are more winners, but not too much. It shouldn't seem easy but not to exclusive.
- o The winners get a bonus on products or a little gift

Flash mob: "A flash mob (or flashmob)is a group of people who assemble suddenly in a public place, perform an unusual and sometimes seemingly pointless act for a brief time, then disperse, often for the purposes of entertainment and/or satire. Flash mobs are organized via telecommunications, social media, or viral emails. The term, coined in 2003, is generally not applied to events and performances organized for the purposes of politics (such as protests), commercial advertisement, publicity stunts that involve public relation firms, or paid professionals."

Infrastructure	Offer
<p>Key Partners</p> <ul style="list-style-type: none"> - Technical experts - Programmer/developer for App - Table produce - Store planners - People using the advice - Phone companies 	<p>Key activities</p> <ul style="list-style-type: none"> - Service for mobile phone - Table as a physical meeting point - Platform for sharing information
	<p>Key resources</p> <ul style="list-style-type: none"> - Trademark - Table to display statements - O-led screens - Application
<p>Cost structure</p> <ul style="list-style-type: none"> - Technology - Tables - Training of employees - Technical support 	<p>Value proposition</p> <ul style="list-style-type: none"> - Closer relationship with customer - To connect people who do not know each other - Know what customers want from the community - Differentiate from competitors - Kill the anonymous shopping - Stronger brand

Business model canvas

ring

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Customer

	<p>Customer relationships</p> <ul style="list-style-type: none">- New application time to time- Game- Flashmob	<p>Customer segments</p> <ul style="list-style-type: none">- Everyone who has a smart phone and is a customer of AH
	<p>Channels</p> <p>Advertisement:</p> <ul style="list-style-type: none">- AH posts on the table- AH Website with information	

Benefits for AH: indirect revenues

- Customer fidelity
- Additional possible services (recipes + map where you can see where the product is located)
- Attracting new customers (that now shop @ competitors)

ncial

3.5 Implementation Plan

During the implementation planning many questions arose, therefore planning was based on our assumptions and can be reworked when all the answers to the following questions are known:

- o How many ongoing projects does Innovation team have at the moment?
- o Can somebody from Innovation team has the time available to bring this project further or a new member of the team has to be recruited?
- o Are there enough resources available (financial, technical and human)?

The implementation plan was worked out based on the knowledge gained in the course New Product Commercialization. For big companies (as Albert Heijn is) project implementation can take a longer time, as at the moment there are many ongoing projects and resources are allocated for these projects already. Thus due to the fact that there are various people involved in the decision making, big companies are not that flexible and go – no go decision making can take a longer time.

The objective of this implementation plan is to show the steps- how the adapted prototype that is placed now in the Innovation Café could be implemented in Albert Heijn XL stores. This implementation plan is a guideline for the next 5 years. Every year it has to be overlooked and the evaluation- if the concept still fits the goals of Albert Heijn- has to be carried out.

The social meeting point "Speak up your heart" will be implemented in the supermarkets of Albert Heijn XL in several steps. In 2011 the project will be adapted for the Innovation Café in the Ahold headquarters in Zaandam. The adapted project is thought as an inspirational tool for the employees and suppliers of Ahold and all others who visit the Innovation Café. The adapted version provides a possibility to test the device with users.

In year 2012 the user test with application could be done. In the adapted version the visual part has been roughly worked out- there could be room for improvement. It is important to test if users can understand how to respond to messages and if the visual style has to be adjusted. During the presentation of the adapted version (June 24th, 2011) various idea appeared- maybe the style and the colors of bubbles could be customized according to the user's wishes. Thus before the implementation in the stores the application for the mobile phones has to be developed and tested.

<i>timeline</i>	<i>phase</i>	<i>deliverables</i>
2017		<ul style="list-style-type: none"> - monitoring the results and looking for improvements - new product/ service features
2016	<p><i>Step 3:</i> implementation in all Albert Heijn XL stores</p>	<ul style="list-style-type: none"> - fully working product - expected that screens will be bendable - expected that tracking in the shop will be possible
2014/ 2015		<ul style="list-style-type: none"> - monitoring the social network developments - monitoring the technology developments - adjusting the application according to user tests
2013	<p><i>Step 2:</i> building working prototype and testing it in one of the Albert Heijn stores</p>	<ul style="list-style-type: none"> - working prototype and application - trained Albert Heijn personnel to help out the users
2012		<ul style="list-style-type: none"> - user tests with the table shape - user tests and observations for the application - developing application for the smartphone, testing with users - introducing the concept to personnel in Albert Heijn stores
2011	<p><i>Step 1:</i> adaptation in the Innovation Cafe</p>	<ul style="list-style-type: none"> - working part- prototype (table with a touchscreen, bubbles are projected using a beamer) - application (by using twitter statements are displayed through beaming, replying is done on touchscreen) - poster about the project and how it will look in the supermarkets

For successful implementation in the stores the project has to be brought further:

- o The location in the shop has to be evaluated- will the tables be placed in the existing spots of the meeting places?
- o A store architect and a designer have to be involved:

- What kind of material to use for the floor under the table (to differentiate the meeting point from the rest of the shop)?
- Will there be an additional element on the ceilings (to make the meeting space cosier and to differentiate it from the rest of the shop)?
- Will there be extra lights in the ceiling?
- Where the power supply for the touch screens will come from?
- What kind of materials to use for the table in order to keep the warm feeling of wood but at the same time make the table resistant for hundreds of users ?

- o Employees of the particular XL store have to be trained to help the users and to be able to explain the details of the project

- o The marketing department of Albert Heijn has worked out an introduction strategy- it could be a flash mob (for example all the customers of Albert Heijn have to send messages with a word "heart" in it (the subject of the flash mob can be defined) or an event (a special introduction afternoon, where people are encouraged to try out the concept and maybe receive a small gift/ reminder about the event).

After the testing phase a working prototype will be built and in year 2013 it will be installed in one of the Albert Heijn stores. At that time bended touch screens still could be too expensive therefore beaming from beneath could be used. When choosing the beaming technology, the shape of the table has to be redesigned (if the beamer is placed below the table, the table base becomes thicker in order to hide the beamer).

In 2016 a fully developed product will be implemented in Albert Heijn XL stores:

- o To successfully implement the meeting point in the supermarket in 2016, all the chosen meeting point spaces in Albert Heijn XL shops have to be redesigned – floor, power supply, ceiling and additional lightning.

- o All the employees of the XL shops have to be educated about the project and how to facilitate the usage.

- o The application has to be available on all the phones that have internet access.

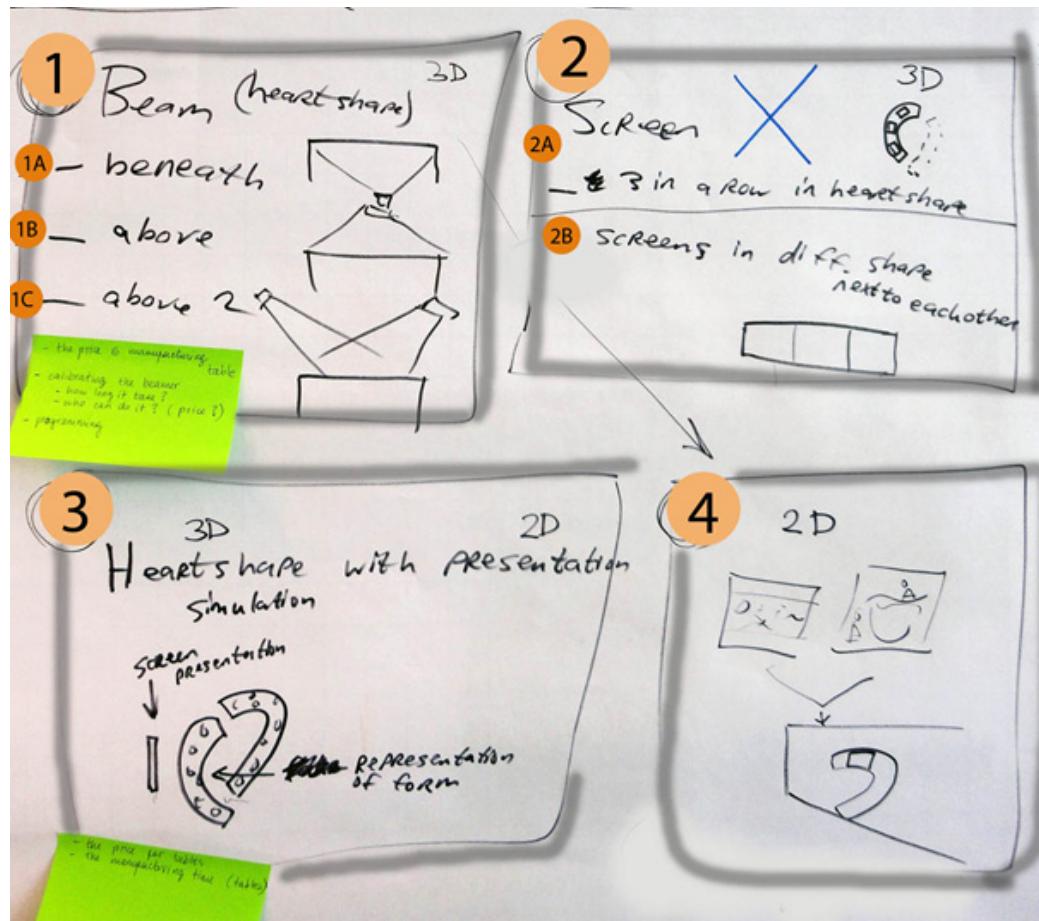
- o For production of the tables a manufacturer has to be found. Taking into the consideration that there are 30 XL shops in the Netherlands in 2011 (based on data of Wikipedia), rough estimation of the production time could be 4 months. However the technology has to be ordered in advance, therefore it has to be kept in mind that from the ordering to the ready product it can take up to half a year

- o The technology team of Albert Heijn will have to program all the screens and be able to do maintenance to the product.

- o The marketing team of Albert Heijn has to have an introduction plan (or use the one from Step 2). It is expected that at year 2016 bendable screens will be available and affordable, and that tracking in a shopping environment will be possible.

4. Adaptation for the Innovation Café

In order to find the best solution for the adaptation of our concept to the Innovation Café different possibilities were overlooked. for each of the possibility a list of pro's and con's as well as "to do" and "what we need" lists were developed.



The pros' and cons' of the ideas.

4.1. Pro's and con's

Pro's and con's of the ideas

Proposition 1

One or both tables are produced in the real shape and size. For this adaptation different beaming possibilities were evaluated.

Version 1A – beaming from beneath

Pro's:

- Shape is covered
- No shading of hands
- Real shape

Con's

- To prevent overheating of the beamer bottom of the table will become thicker
- Support pole of the table will block the beam

To do

- Take out existing furniture
- Make table
- Make app
- Make program
- Calibrate/ calculate beams
- Redefine shape without support

Need

- Beamers
- Table (shaped)
- Touch top layer
- Computer
- app

Version 1B - beaming from above using one beamer

Pro's

- very close to the real thing
- shape is covered

Con's

- hand shading
- heat (less than version 1A)

To do

- see version 1A

Need

- see version 1A

Version 1C - beaming from above using 2 beamers

Pro's

- shape is covered
- (almost) no shade
- Very close to the real concept

Con's

- Little shade
- Lots of calibrating (the two beamers)
- Heat (but less than version 1A)

To do

- See version 1A

Need

- See version 1A

Proposition 2 – using touch screens

Two different screen using propositions were discussed. In version 2A a heart shaped table (one) would be produced and three touchscreens would be added on the top. In version 2B the existing table of Innovation Café would be used, but the touch screens would be added on the top.

Version 2A

Pro's

- Shape is there
- No shape calibration (for the beamers)
- No heat issues (the beamer)

Con's

- No connected screens
- Sticker (between the screens) can look cheap
- Can't put the coffee etc. on it
- Difficult maintenance

To do

- See version 1A, just without calibration of the beamer
- Shape redefinition is not needed
- Make sticker

Need	- See version 1A - Beamers= screens - sticker	- sticker - computer
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Version 2B

Pro's	- using existing furniture - flow is there - no calibration (of the beamer)
Con's	- not the real shape (as in the concept) - divided flow - difficult maintenance - can't put coffee etc. on it
To do	- see version 1A
Need	- see version 2A (just without sticker)

Proposition 3

In this version a real size heart shaped table would be produced, however the interaction would be a simulation. The story board (a movie) would be played on a screen presentation behind the table. In this version the table would represent the heart shape, in this way giving an impression about the real concept.

Pro's	- very easy
Con's	- no real interaction - no experience
To do	- make table - make sticker - make program/ video - the real concept has to be shown extra
Need	- table (shaped) - screen

Proposition 4

In this version there would be no three-dimensional object-everything would be two dimensional. Heart shaped tables would be a print image or beamed on the wall. A touch layer could be attached to the wall (in the place where is the table top beamed), in this way giving some kind of interaction possibility – people could reply to the statements there.

Pro's	- easy to make - less work - cheap
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Con's	- no real interaction - no experience - no table
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To do	- make program/ video - show the real thing - make sticker
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Need	- beamer/ screen - computer
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Conclusion

Keeping in mind the available time and resources (labor and expenses) for making the prototype, it was decided to propose two different versions for the client.

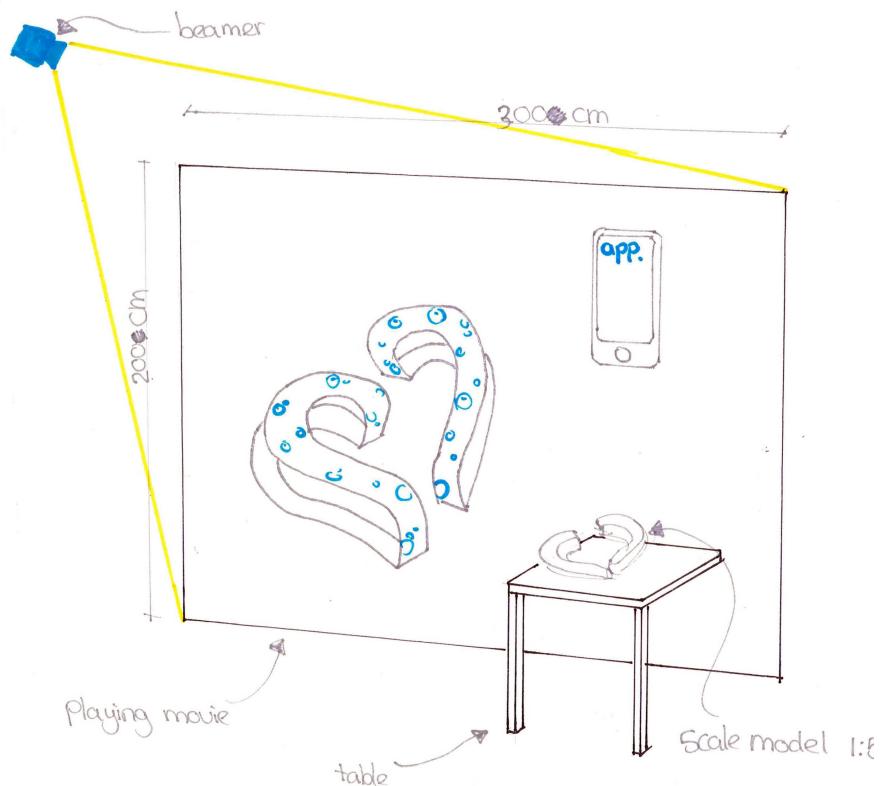
4.2. Cost estimation

Version 1

Only a scale model prototype would be produced and exhibited. The main concept would be projected on the wall. On the projected table top it is possible to add a touch layer, so people would have the possibility to interact. The good points about this version are that it is cheap and easy to produce and we could fit in the available time span. However the weak points are that no real prototype would be made, therefore people would not have the possibility to experience.

Cost estimation for version 1 (in euros)

Beamer	800
Scale model 1:5	75
Beaming area	75
Table	50
Movie	made by team
In total	1000 euros

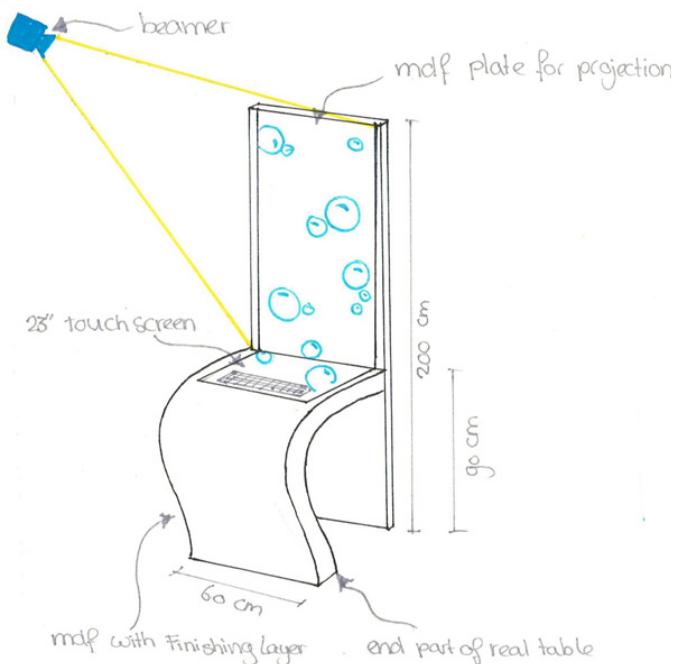


Version 2

This version came up in the discussion process as a compromise between all the propositions mentioned before. In order to fulfill all the requirements (fitting in the time span and to fulfill the task objective) this version was seen as the best option. The good points are that a feeling of the real prototype is obtained. The user is able to experience interaction with the product and to use the service. The messages would be sent by using twitter. Messages would be beamed on the back plate of the object. In order to respond to the messages user will use the touchscreen.

Cost estimation for version 2 (in euros)

Beamer	800
Touch screen 23"	1100
Table with wood finishing	350
Software program	Developed in the team
Computer	Using the one in Innovation Café
Poster printing	50
In total	2300 euros



5. Simulation of the Innovation Cafe Design “the Hearth Shape Top”

We took the brave decision to build the prototype all by our selves but luckily we did get some help from a furniture making expert. He provided a lot of the knowledge, tools and a workshop. Mainly the prototype is produced out of MDF (Medium-Density fiberboard). We choose this material because it is easy to process but very strong and heavy. It is often used in the furniture business. We later covered this MDF with a laminate to get the desired finishing. In the collage on the next pages you can see the process of building the prototype. The plate material we used for the bended parts is bendable multiplex with a thickness of 5 mm. On the outside of the curve we used multiple layers of this multiplex to gain more strength. All these wooden parts are stuck together with a lot of glue and staple nails.

The laminate we used to cover the prototype is called HPL (high pressure laminate) of the brand Egger. We choose this kind of material because it has a wooden appearance and structure but it is stronger than real wood and lower in maintenance. The color of this laminate has to be bright so the device looks fresh and inviting. We choose the color H3006 with the name “Zebrano Zand”. This color has a light sandy appearance. This fit our goal of being fresh and inviting but it also combines nice with the blue of Albert Heijn and the blue of the floating water and bubbles of the interface. An inspiration for this color assembling was the façade of the new Albert Heijn building on the W.H. van Leeuwenlaan in Delft.



Material inspiration



Pictures of the final prototype





6. Simulation of the Innovation Cafe Design “the Application”

For the prototype an interface had to be developed. There were several options to do this. However Adobe Flash was the most logical choice because one of the team members already know this program and its language, there is a lot of data about it on the internet for reference and all the visuals for the interface were already available in Flash because of the earlier made impression movie about the interaction of the concept.

Besides the software there should also be corresponding hardware. Together with the people of Albert Heijn the decision was made to visualize a part of the shape of the final concept and as a big attraction part a big vertical area would show the interface. Therefore we use a touchscreen and a beamer. Several options to process the software were investigated and the most ideal option would be to have one program fill both the touchscreen and the beamer projected area. Therefore you need an extended desktop in the vertical direction, however the options you have with the configuration of the Samsung 230 TSN (touchscreen) and the Samsung LED projector SP-F10M (beamer), which were both provided by Albert Heijn, did not allow to extend the desktop in that direction, only in the horizontal direction. Therefore you need expensive software and/or expensive other equipment.

Another option was to stretch the desktop on both screens, but this resulted in distorted touch functionality, because not only the desktop would be cut in half but also the functionality of the touch layer which means that half of the touch layer would control the beamer area and the other half the screen area. This means there is no precision in the touch functionality anymore and that is an essential part of the interface.

After this discovery we decided to use a horizontal extended desktop and run two simultaneous programs next to each other where one is the main program and send data to the other. The main program would appear on the screen and the side program would be on the projected area.

Due to capabilities and time issues (the time was too short to develop both the interface of the table and the app at the same time) another concession to the final concept was made for the final prototype, namely using Twitter to post a statement from your mobile phone instead of an app on your phone.

The programming was done within Flash Actionscript and makes use of several little movieclips that are being called and which all have their own properties and actions to be activated. It uses mouse events and URL requests to activate them, but only on the main program, because the side program is controlled by the main program via a local network connection that is being created between them.

The main program

The main program is the program where all the data comes in and which is shown on the touchscreen. There were several functionalities that had to be included in the prototype:

- 1. You should be able to send a statement from Twitter to the prototype**
- 2. You should be able to type a statement on the prototype itself**
- 3. You should be able to enlarge a bubble and write a comment to that bubble**
- 4. The bubbles should float over the screen**

Functionality number one, the Twitter aspect, gave some problems. While Twitter has a big Application Programming Interface (API), the rules and possibilities for communicating with different programs and languages, it doesn't have a big part on Flash in particular. It gives you the ability to request the status updates of your own account, but searching for other messages is somehow more difficult for Flash. This is the reason that while writing this report, the prototype makes use of status updates of the "Speak up your heart" Twitter account (speak_heart). People can log in on this account with the password: "innovation" and leave their statement there. This is not ideal because you would prefer to use the peoples own account, because then you can also identify the person who posted it and in the future we hope to find a way to process all the messages with #suyh. Using a hashtag (#) is the way to search for subjects and to put your message in a certain category within Twitter.

When people would post with #suyh in their statement it should be easier to find the statements. Another reason why it is not ideal is that Twitter has set a rate limit for status update requests from an external program. This rate limit allows you to make 150 requests per hour. Which comes to one update request per 24 seconds. This is too long and the hashtag option is proven in other programming languages to have no rate limit. The Twitter aspect is still in progress and we hope to find a solution for this.

To put a statement via the screen we make use of an on screen keyboard that is build-in in the software. To make the statement, you push the big bubble in the bottom right which says: "Klik hier om een Bubbel te schrijven" and the bubble will fill the screen and a keyboard and a send button will appear.



You can enter your message by pushing your finger on the correct "keys" and when you are finished push send.



Then a bubble will appear that shows your statement and that will float around on both the touchscreen interface and on the projected area. The idea in the final concept was to let the bubbles float from up to down and off the screen where they would start at the top of the screen again. This was not possible to fix in the prototype and because there was already the concession of the two

different programs, it was easier to let them float around randomly on both screens than to let them float from one screen to the other. In this way you still can control all the bubbles on the touchscreen without having to wait until it floats on the touchscreen, so in that way it complies more with the usage in the final concept, where you can always control all the bubbles.

On the touchscreen you can make the bubble bigger by touching it. And a side bubble will appear connected to it. Touching the side bubble makes you able to write a comment to that specific statement. The keyboard, the send button and a small text area will appear where you can enter your comment. When you press send, the comment will appear as another side bubble connected to the main bubble. In the prototype you can add up to five comments. More would make the program to complicated and could make the computer run slow. However after tests done during the final presentation, it appeared to not run slow at all and it would be a big improvement to extend this number.



To make the bubble small again you have to touch it again or wait for 1,5 minute. The bubble will stay on the device for 24 hours.

Before, during and after the presentation there was the big test how the program would perform and some other issues then already mentioned before, that could need improvement are:

1. A cancel button within the two keyboard screen, so you could get out of the keyboard screen without posting a (empty) bubble.

2. A maximum of bubbles that appear on the screen, so it will not get too crowded and the bubbles can still float. So then the bubble would stay on the screen for 24 hours except when the limit of a number of bubbles is reached and then the bubble will also disappear.

3. The send button has to be a bit bigger or a different color, because people can't find it really easily and try to use "Enter" to post the bubble, while you use "Enter" to make an extra line.

4. The shift letters above the normal letters (the smaller letters on the keys) could be a little smaller to show which the normal key is and which the shift key is in a better way.

5. On the touchscreen area the bubble bounce in an explosive way while on the beamer they just bounce really calm and just move out of each other. They should both do the calm way.

6. The newer bubble can float above the older bubbles when the older bubble is enlarged to show its comments.

7. The 24 hours function in the beamer program is not synchronized with the 24 hours function of the touchscreen program.

8. Make the beamer program a little less wide to make it fit better on the prototype.

9. A settings-function would help to change some values easier (like the time a bubble should be shown and the maximum of bubbles). This is also nicer for the programmer, because it will save him work.

10. Last it would be good to build in an option to be able to delete a certain bubble when there is some provocative language in the statement. This would then be an option for the moderator/owner only.

7. Closure

The recommendations are given on a more personal basis and thus each member of the team gives his own short recommendations for the project, or other developments connected to it.

Karina:

"It was a great opportunity to participate in this IDP project and work out a project for Albert Heijn. Retail has always been a great interest of mine. During the project I gained deeper knowledge about trends in retail and also the developments of online social networks (as that plays an essential role in the concept worked out). This project also gave me the opportunity to test the knowledge obtained during the studies in a real life environment. I would advise Albert Heijn to bring the concept further, as it can give the company a competitive advantage and maintain their position "first with the innovative solutions" in the dutch market."

Renee:

"Especially after the presentation I believed we achieved the goal of; inspiring people of the innovation cafe. The amount of new suggestions and question set peoples mindset open to think more the direction of social meeting points. In that way I believe our project is definitely a great success. My recommendation to Albert Heijn for the next phase will be testing the device inside the innovation café, and than fine-tune it so it also can be tested inside a real store. By fine-tuning I mean; removing all the bugs of the software and maybe work a bit more of the software's visuals. I strongly believe this table could bring extra value to the Albert Heijn brand and I am very thankful that I was a part of this project."

Deian:

"I'm personally very pleased with the outcome of this project. As one of the last student group work projects in the curriculum of the TU Delft designers it rightfully holds its ground. As I reflect now I feel happy that this project was diverse and despite all of the difficulties which appeared in the settings where it took place, it resulted in a product which both me and the customer can be proud of. I would like to recommend that projects like these and perhaps even their development are set as trials in stores and thus confirm or disprove their validity in the AH retail environment."

Barbara:

"The aim of the project was to inspiring AH and I believe that we were able to reach the goal. Actually I leave the project inspired. It was a great opportunity for me to collaborate with AH – I learned a lot about the Netherlands and I gained insights in the different aspects of retailing. The Team of the Innovation café welcomed us warmly and was always open for any kind of issues. For the future I wish to see "Speak up your heart" in the Albert Heijn stores, it would be a nice reward for the hard work, the energy, and enthusiasm every single team member of the group Razb spend in the project. My recommendation for the Innovation Café are to be aware of the activities of their competitors and to observe the market carefully. Trends in social networks should be screened constantly and a testing with real user is crucial for the success of "Speak up your heart."

Thank you, Innovation Team and thank you, Team Razb."

Marcel:

"When looking at the final deliverables I think we reached the goal of triggering people to think about new ways to socialize. Especially all the ideas that rise up during the presentations show that. For the future the device first has to be tested at the Innovationcafé and get rid of bugs, things that don't work as it would be best and test if the people are actually using it for a longer period. Then the device can be tested in a real store. Then a real table could be established and also tested in a store. Another thing I strongly recommend is to make the statement writing within the Appie app. This will make it easier for people to use the final product, because they are already using the app in the store.

I want to thank Albert Heijn for the trust in our capabilities and the support and enthusiastic reactions, because it was a challenging assignment with a lot of expectations and I think we fulfilled those expectations pretty good."

Sandra:

"The goal of our project was to inspire people visiting the innovation café about the future social meeting point for Albert Heijn. I think the assignment was really challenging because it incorporated two different goals; inspiration for the innovation café and the design of the social meeting point for the future. What also made it challenging was communicating with the different divisions and people of Albert Heijn. I think we managed well and I am proud of the result."

Discussion during the presentation:

During the presentation there were also some elements that were discussed. One of the topics was the opportunity to change your bubble to a more personal style. Other things were let the bubbles stay on the table so people would have more time to react on them and to not wait until some technologies are available, but already test it within a shop.

Changing the bubbles and letting them stay for a longer period are things that have to be investigated by testing with people and asking the people for their opinion about the personalization of the bubble. At this moment we chose to create one style, to let it be a smooth and calming atmosphere, while with all the different bubbles it could result in a toy like atmosphere. We chose for the time in the shop to leave the bubble there, because else the table top get crowded with bubbles and there is no flow in it anymore.

Testing the device earlier in a shop is not recommended, because the current prototype is not without bugs and it would be best to first fix the initial bugs and needs that rise up before putting it in a bigger audience.

A final remark is that the content within the bubble can be adjusted to also pictures and videos, but it should always carefully be examined if the addition is supporting the initial thought of connecting people.

8. Conclusions

Phase 2 was concluded with the 5 concept presentation for Albert Heijn. In the phase 3 we were busy with adjusting the concept for the Innovation Cafe, building the prototype and programming the application. In two previous phases a lot of market research was done, therefore in the marketing plan we identified and included the missing elements- the competitor analysis, the SWOT and the business model canvas of Alexander Osterwalder.

SWOT analysis was particular useful as it identifies all the strengths, weaknesses, opportunities and threats and the outcome of SWOT will be a helpful tool for Albert Heijn if they decide to bring this project further. The business model canvas was used to gather in one matrix all the information gained. This tool also helped to identify the indirect profit possibilities and what could be the added value for Albert Heijn.

The marketing plan was concluded with the implementation plan, where all the steps for successful concept implementation in all Albert Heijn XL stores were identified. Due to the fact that implementation timeline has been based on the assumptions, it has been advised that the Innovation team of Albert Heijn evaluates the steps and the resources available. Hopefully the project could be implemented even earlier than planned.

During this phase the work between the team members was divided- Strategic Product Design students were involved in writing the marketing plan and making the project poster (that is exhibited next to the prototype); students from Design for Interaction and Integrated Product Design were involved in building the prototype and the application. However during the weekly group meetings group members presented the work done and the feedback from other group members were gathered. In the last two phases of the project there have also been weekly meetings with the mentor Annemiek van Boeijen and her input was always helpful in bringing the project further.

Although the prototype has been placed in the Innovation Cafe and presented to the client, some small adjustments to the application have to be done. Therefore two of the team members (Marcel and Renee) are going to work further on the adjustments in the following weeks and are going to return to Innovation Cafe and implement them.

The prototype would not be built without a help of Wilbert Veenstra. We would like to thank him for the openness and knowledge offered to Sandra, Renee and Deian during the process and of course for the opportunity to use his workshop. Special thanks to Mark de Hoogh for spending his time and helping Marcel to build the application.

We would like to thank Albert Heijn and especially Monique Winters for this great learning experience! Special thanks to our mentor Annemiek van Boeijen and detached critic Erik Jepma who always gave a fresh opinion on the project that helped us to reach a result we are very proud of.

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